

FD-211 Double Density Floppy Disk System for the LSI-11 and LSI-11/2

Description

The FD-211 Double Density Floppy Disk System is totally instruction-set-compatible with the Digital Equipment RXO2 Floppy Disk System. It provides a compact, low-cost and highly reliable solution for all RXO2 applications.

The low-profile, 5¼" enclosure houses two floppy disk drives, each providing up to 512K bytes of formatted storage plus the Power Supply. Controller/Interface electronics are contained on a single, dual-height card using only half a quad slot of the LSI-11 backplane. This contributes to low cost and reliable system performance with reduced interwiring.

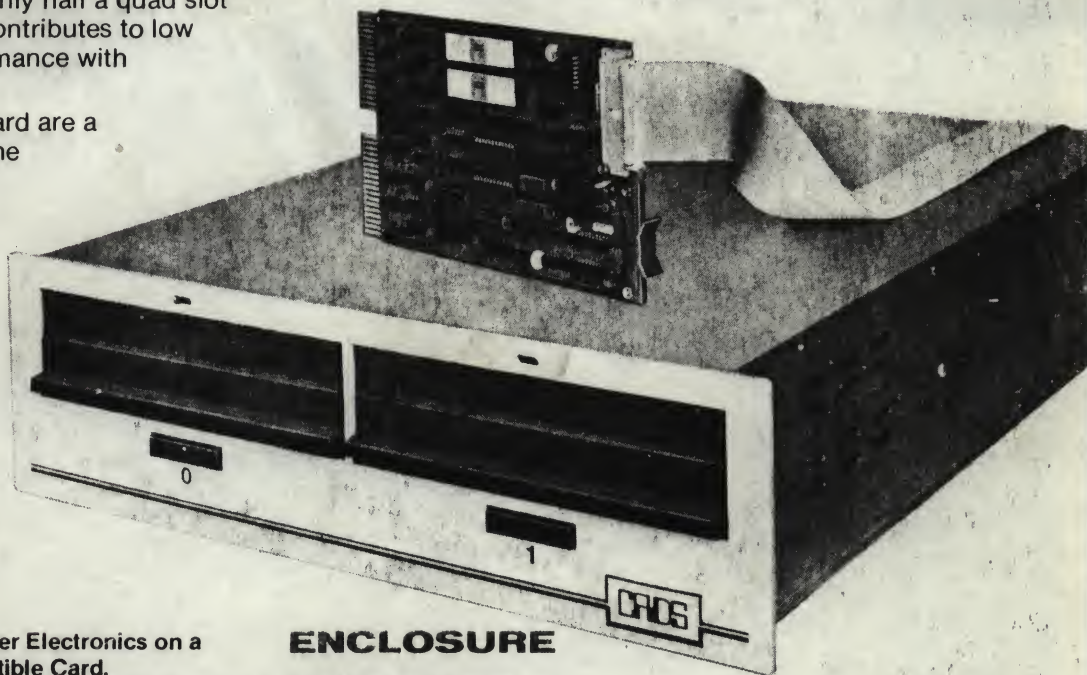
Included on the Controller Card are a built-in bootstrap (eliminating the need for the DEC BDV-11AA or REV11 card) and IBM 3740 formatter. The bootstrap loader automatically boots a system diskette if no other bootstrap loader is present. A self-diagnostic program is also included with each system.

CRDS CONTROLLER CARD

Each FD-211 Controller Card offers all of these features:

- Interface, Bootstrap, and Formatter Electronics on a Single, Dual-Height DEC-Compatible Card.
- Complete Software/Media Compatibility with DEC RXO2.
- Single and Double Density Operation with Each System.
- DMA Data Transfer on Per-Sector Basis.
- Formats Sector Headers.
- Formats Single and Double Density Marks which Allows User to Modify Density Selection of Diskettes.
- Self-Diagnostic.
- Bootstrap Loader Functions Automatically on Power-Up.
- Cyclical Redundancy Check.
- 2901 Microprocessor Controller Allows RXO2 Emulation Plus Additional "Smart" Functions.

Industry standard Shugart drives add to the system's dependable performance. Modularity of construction allows easy replacement of the drive, controller or power supply, if necessary, thus reducing mean-time-to-repair. Complete Installation Data, Schematics, Preventive Maintenance and all necessary operating information is contained in the FD-211 Installation Manual provided with each system.



ENCLOSURE

- 5¼" Panel Height.
- Front Panel Write-Protect Switches.
- On-Off Circuit Breaker.
- Modular Construction for Easy Replacement of Drives or Power Supply.
- Shugart SA-800 Series Drives with:
 - LED's On Each Drive to Indicate Read or Write Operation.
 - Sensor for Detection of Write-Protect Hole on Diskettes.
 - Automatic Head Unload.
- Power Supply with Optional 110V or 220V AC Input, 50 or 60 Hz Operation.
- 10 Foot Ribbon Cable.

CRDS

Charles River Data Systems, Inc.

THE NEW YORK PUBLIC LIBRARY ASTOR LENOX TILDEN FOUNDATION 1892

The New York Public Library, Astor Lenox Tilden Foundation, is a non-profit corporation organized under the laws of the State of New York. It was founded in 1892 by the bequest of John Jacob Astor, Lewis Tilden, and John Edward Lenox. The Library is one of the largest and most important libraries in the world, with a collection of over 5 million volumes. It is open to the public and provides a wide range of services, including lending, reference, and research.

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FD-211 System Specifications

8 Bit Bytes per Sector	
Single Density	128
Double Density	256
Sectors/Track	26 (1 to 26)
Tracks per Diskette	77 (0 to 76)
Format	IBM 3740
Recording Format	MFM, FM
Command Status	
Register (RXCS) Address	777170
Interrupt Vector Address	264
Data Buffer Transfer	DMA
Rotation Speed	360 RPM
Average Latency (1/2 Rev)	83 ms
Track to Track Access	8 ms
Head Settling Time	35 ms
Average Track Seek	203 ms
Maximum Track Seek	609 ms
Average Access Time	321 ms
Error Rates:	
1 per 10 ⁹ Bits (Soft Read)	
1 per 10 ¹² Bits (Hard Read)	
1 per 10 ⁶ (Seeks)	

POWER

100-120 VAC at 2.0 amps max. (60 Hz)
 200-240 VAC at 1.0 amp max. (60 Hz)
 50 or 60 Hz \pm 0.5 Hz
 +5 VDC at 2.1 amps typical
 (Controller Card)

ENVIRONMENTAL

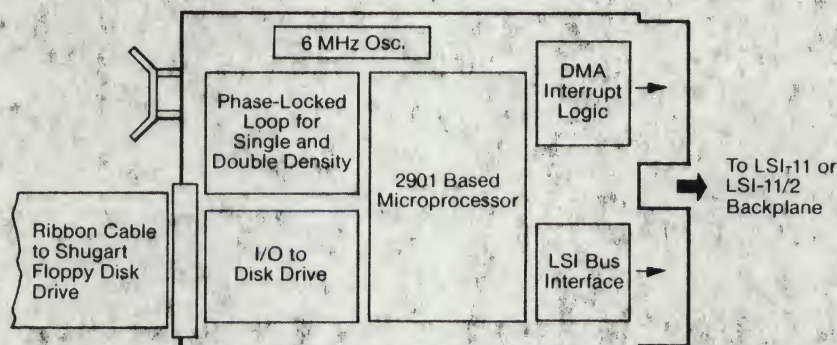
10° C (50° F) to 52° C (125° F) Operating
 (Media Limitation)
 20% to 80% Relative Humidity

DIMENSIONS

ENCLOSURE: 19" (482.6 mm) Wide
 5.25" (133.4 mm) High
 22.1" (561.3 mm) Deep
 20.5" (520.7 mm) Depth into Rack

CONTROLLER

Standard DEC Dual-Height Card



The compactness of this Controller/Interface Card is achieved by using 2901 microprocessors as part of a high speed processor designed specifically to handle the special requirements of Floppy Disk Controllers.

SYSTEM TESTING

Each FD-211 System is subjected to comprehensive testing prior to shipment. Using the TESTLINE 4000 PCB Unit with bed-of-nails fixture, each controller card receives automated in-circuit diagnosis down to the individual device level. Upon completion of checkout for shorts, opens, device

performance, and total card performance, the controller is put through 48 hours of temperature cycling (10° F to 165° F).

Each FD-211 Floppy Disk System receives final testing using LSI-11 System Diagnostics.



Charles River Data Systems, Inc.

THE HISTORY OF THE

NAME	AGE	SEX	RELATION
John Smith	25	M	Head of Family
Mary Smith	22	F	Wife
James Smith	18	M	Son
Elizabeth Smith	15	F	Daughter
Thomas Smith	12	M	Son
Ann Smith	10	F	Daughter
William Smith	8	M	Son
Isabella Smith	6	F	Daughter
Robert Smith	4	M	Son
Charlotte Smith	3	F	Daughter
Henry Smith	2	M	Son
Frances Smith	1	F	Daughter



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